INTRODUCTION

The Environmental Assessment (EA) is a site specific analysis of potential environmental impacts that could result with the implementation of a proposed action. The EA assists the Agency in project planning and insuring compliance with the National Environmental Protection Act (NEPA) and making a determination as to whether any "significant" impacts could result from proposed actions. This EA has been prepared for the Swiftwater Field Office's proposed **PIPELINE Regeneration Harvest**. This proposal is in conformance with the *Final - Roseburg District Proposed Resources Management Plan / Environmental Impact Statement* (PRMP/EIS) dated October 1994 and its associated *Roseburg District Record of Decision and Resources Management Plan* (RMP) dated June 2, 1995. The RMP was written to be consistent with the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl* (FSEIS); dated Feb. 1994 and its associated *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (ROD) and *Standards and Guidelines for Management of Habitat for Late-Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl* (S&G's) dated April 13, 1994; and generally referred to as the "Northwest Forest Plan" (NFP). The ROD establishes management direction consisting of ". . . extensive standards and guidelines including land allocations, that comprise a comprehensive ecosystem management strategy" (ROD pg. 1).

The project described in this EA will undergo formal public review. After the completion of public review a "Finding of No Significant Impact" (FONSI) would be signed if appropriate. A signed FONSI finds that no "significant" environmental impact (effect) would occur with the implementation of the proposed actions beyond those already addressed in the FSEIS when the Project Design Features (PDF's) specified in this EA are followed. "Significance" has a strict NEPA definition and is found in regulation 40 CFR 1508.27. The FONSI documents the application of this definition of significance to the proposed action. A Decision Document would be completed after public review to document the decision and reflect any changes as the result of public review, however, Forest Management Regulation 43 CFR 5003.2 states that "[w]hen a decision is made to conduct an advertised timber sale, the notice of such sale shall constitute the decision document." This notice would be placed in *The News Review* and constitute a decision document with authority to implement a proposed action.

I. PURPOSE OF AND NEED FOR ACTION

This section provides a general overview of the proposed action. Included are: the need for the action, a general description and background of the proposal, the issues to be analyzed, and issues eliminated from detailed analysis in this EA.

A. Need for Action

The RMP and the ROD respond to dual needs: ". . . the need for a healthy forest ecosystem with habitat that will support populations of native species and includes protection for riparian areas and waters. . . . and the need for a sustainable supply of timber and other forest products

that will help maintain the stability of local and regional economies . . ." (RMP pg. 15, ROD, pg. 26). The Swiftwater Field Office proposes to offer the **Pipeline Regeneration Harvest** timber sale for auction in fiscal year 1999 or later. This proposal would help meet the Roseburg District's annual harvest commitment or allowable sale quantity (ASQ).

B. Description of the Proposal

The proposal is to harvest timber in the Calapooya, Elk Creek, and Upper Umpqua Watersheds located in Sections 7, 19, and 21, T23S R5W; and Sections 1 and 13, T23S R6W; W.M. (see maps, Appendix A and B). The proposed project area is approximately 15 road miles north of Sutherlin and 24 air miles due north of Roseburg, Oregon. Approximately 225 acres were analyzed for potential harvest activities. New road construction and renovation or improvement of existing roads would also occur. Section II (pg. 4) of this EA provides a more detailed description of the Proposed Action Alternative.

The ROD (pg. 6) divides the federal landbase into seven land use allocations (LUA) or categories. This project is within the "Matrix" LUA. "Stands in the matrix can be managed for timber and other commodity production, and to perform an important role in maintaining biodiversity" (S&G, pg. B-6) by providing for biological legacies (snags, large woody debris and retention trees) that bridge past and future forests. The RMP further classifies the Matrix into two categories: the "General Forest Management Area" (GFMA); which are lands available for timber harvest and "Connectivity / Diversity Blocks" which are lands that are available for timber harvest and also provide connectivity between Late-Successional Reserves and Riparian Reserve. This project is not in a Key (Tier 1) Watershed.

C. Background

The Pipeline Regeneration Harvest project occurs within several drainage areas as follows:

Andrews Creek (3,801 acres), Billy Creek (5,371 acres), Flagler Canyon (2,953 acres), and Huntington Creek (2,861 acres) occur within the Elk Creek Watershed which covers approximately 187,200 acres (293 square miles). Upper Yellow drainage (6,075 acres) occurs within the Upper Umpqua Watershed which covers approximately 169,476 acres (265 square miles). Cabin Creek drainage (12,828 acres) occurs within the Calapooya Watershed which covers approximately 157,195 acres (246 square miles).

Watershed Analyses used for this analysis were Brush - Hayhurst - Yoncalla, East Elk, and Elkton-Umpqua Watershed Analyses. These documents are available for public review at the Roseburg District Office. Current landscape patterns include natural stands that are the result of fire, managed stands established following timber harvest, and non-forested agricultural and pasture lands.

Watershed analysis (WA) for the Calapooya Creek Watershed is in progress and has not been completed at this time. This project was designed to harvest only on Matrix lands. Regeneration harvests would not occur within Riparian Reserves. Watershed analysis would not be required for the Calapooya Watershed Analysis Unit since this project does not enter Riparian Reserves (ROD, pg. B-20). The Calapooya Creek WA is expected to be completed in Summer or Fall of 1999.

The RMP (pg. 34) requires that late-successional forests be retained in watersheds that comprise 15% or less late-successional forests (LSF) on federal lands in fifth field watersheds (S&G, pg. C-44). Any timber stands greater than approximately 80 years of age are considered late-successional habitat (S&G, pg. B-2). Table 1 below gives the break down of LSF on federal lands.

Table 1

Fifth Field Watershed	Acres Federal Lands	Acres LSF (Fed. Lands)	Percent LSF (Fed. Lands)	Proposed Harvest Acres	Resulting Percent LSF
Calapooya	11,015	3,735	34	4	34
Elk Creek	44,935	18,811	41	199	41
Upper Umpqua	57,371	31,475	55	12	55

Four of the units are within a connectivity / diversity block (Section 19). The RMP (pg. 34) requires that 25 - 30% of each connectivity block be maintained in late-successional forest. This block contains 510 acres of federal land. This project would remove approximately 69 acres of late-successional forest from this block leaving 141 acres of late-successional forest (28% of the block) post harvest.

The Brush-Hayhurst-Yoncalla Watershed Analysis makes the following recommendations for the Pipeline Regeneration Harvest Area:

1. Fully protect the headwaters of Huntington and Billy Creeks with full riparian buffers.
2. Consider roads number 23-6-13.0 and 23-6-14.0 for possible repair/renovation/or closure.
3. Road Number 23-5-19.0 has some cutslope failures and colluvial ravel. Needs repair.
4. Investigate obliterating roads in T23S, R5W, Section 19.

D. Objectives

1. For the Matrix portion:

a. “Produce a sustainable supply of timber and other forest commodities " and “Provide connectivity . . . between late-successional reserves” (RMP, pg. 33).

b. Improve stand health by reducing the excess stocking in the forest stand to increase the growth and vigor of the remaining individual trees.

2. Implement ecosystem management as outlined in the ROD and RMP.
   - avoid damage to riparian ecosystems and meet the objectives of the "Aquatic Conservation Strategy" (S&G, pg. B-11; RMP pg. 19)
   - "Provide habitat for a variety of organisms associated with both late successional and younger forests." (RMP pg. 33)
   - maintain "ecologically valuable structural components such as down logs, snags and large trees" (RMP pg. 33)
   - improve and/or maintain soil productivity (RMP pg. 35)
   - "Maintain or enhance the fisheries potential of the streams . . . " (RMP pg. 40)
   - protect, manage and conserve all special status and Supplemental Environmental Impact Statement special attention species habitat (RMP pg. 41)

E. Decisions to be Made to Meet Proposal Objectives

1. The Decision Maker (the Swiftwater Field Manager) will need to decide:
   - if this analysis supports the signing of a FONSI.
   - whether to implement the Proposed Action Alternative, modify the Proposed Action Alternative, choose another alternative, or accept the No Action Alternative.

2. Consultation with the National Marine Fisheries Service (NMFS) will need to be done for the Cutthroat trout and Coho salmon. This project may have to be altered as the result of this consultation (See Section V, para. A).

F. Issues Considered but Eliminated from Detailed Analysis

The Interdisciplinary (ID) Team identified the following concerns during project design. They were eliminated from further analysis because: (1) project design features (PDF's) included in the preferred alternative would sufficiently mitigate the anticipated environmental impacts of specific activities, or (2) the impacts are within the limits addressed in the ROD/RMP. Section II, paragraph C (pg. 5) provides a list of specific PDF's incorporated into the preferred alternative to deal with these issues. These issues are summarized in Appendix D ("Issue Identification Summary") and addressed the Specialist's Reports in Appendix F.

1. Botany
   Survey and Manage plants

2. Soils
   a. Unstable and potentially unstable areas
   b. Category 1 soils

3. Wildlife
   a. Survey and Manage Mollusks
   b. Northern spotted owl

"Critical Elements of the Human Environment" is a list of elements specified in BLM Handbook H-1790-1 that must be considered in all EA's. These are elements of the human environment subject to requirements specified in statute, regulation, or Executive Order. These elements are as follows:

1. Air Quality
2. Areas of Critical Environmental Concern (ACEC)
3. Cultural Resources
4. Environmental Justice
5. Farm Lands (prime or unique)
6. Floodplains
7. Native American Religious Concerns
8. Threatened or Endangered Species
9. Wastes, Hazardous or Solid
10. Water Quality, Drinking / Ground
11. Wetlands / Riparian Zones
12. Wild and Scenic Rivers
13. Wilderness

These resources or values (except item #8) were not identified as issues to be analyzed because: (1) the resource or value does not exist in the analysis area, (2) no site specific impacts were identified, or (3) the impacts were considered sufficiently mitigated through adherence to the S&G's therefore eliminating the element as an issue of concern. These issues are also briefly discussed in Appendix E ("Critical Elements of the Human Environment"). Item #8 is addressed in the Specialist's Reports (Appendix F) and the Biological Assessment which is prepared for Endangered Species Act consultation.

G. Issues to be Analyzed

The ID Team identified the following concern as having sufficient potential affect to warrant more detailed analysis and will be addressed in Section IV, "Environmental Consequences" (pg. 11 t0 16) as a key issue.

Fisheries and Water Quality

II. ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

This section describes the No Action and Proposed Action alternatives, and any alternatives considered but eliminated from analysis. These alternatives represent a range of reasonable potential actions. This section also discusses specific design features that would be implemented under the action alternatives. All action alternatives were designed to be in conformance with the RMP.

A. The No Action Alternative

The No Action Alternative is required by NEPA to provide a baseline for the comparison of the alternatives. This alternative represents the existing condition. If this alternative were selected there would be no harvesting of timber within the bounds of the project area. Harvest would, however, occur at other locations within Matrix lands in order to meet harvest commitments. Selection of this alternative would not constitute a decision to reallocate these lands to non-commodity uses. Future harvesting in this area would not be precluded and could be analyzed under a subsequent EA.

B. The Action Alternatives

The ID Team considered three action alternatives:

Alternative A: Permanent ridge road (23-6-24.1 extension) in Section 13 and cable log Unit 13B.

Alternative B: Temporary ridge road in Section 13 and cable log Unit 13B. All other project design features are the same as Alternative A.

Alternative C: No ridge road in Section 13 for access to unit 13B, and helicopter log Unit 13B. All other project design features are the same as Alternative A.

Alternative A was the IDT's proposed action alternative that is analyzed in this EA and referred to the Decision-maker for decision.

Features common to all alternatives

1. All proposed road decommissioning, renovation and improvement.
2. Replacement of the old bridge in Section 12 (Road No. 23-6-12.1) with a pipe arch culvert and replacement of an existing culvert (Road No. 23-6-12.2) with a new culvert. Both culverts would permit the passage of fish.

C. The Proposed Action Alternative

Implementation of the Proposed Action Alternative (Alternative A) would result in the harvest of approximately 12.0 MCF (thousand cubic feet) or 7.5 MMBF (million board feet) of the Roseburg District's FY 1999 harvest commitment of 7.0 MMCF (45 MMBF). A small amount of additional timber could potentially be included as a modification to this project. These additions would be limited to removal of individual trees or small groups of trees that are blown down, injured from logging, are a safety hazard, or are trees needed to facilitate the Proposed Action (ex. guyline and tailhold trees or additional trees within the road construction prism). Generally these trees would be left on site as CWD or snags. Harvest activities would occur on 10 units for 210 acres of regeneration harvest and approximately 5 acres of partial cut or individual tree selection harvest. Other activities would include: permanent road construction, temporary road construction, road renovation and improvement, subsoiling of previously compacted skid trails, road decommissioning, site preparation with fire (slash burning) and replanting with young seedlings.

Approximately 0.55 miles of **permanent road construction** would occur on government land to access harvest unit number 13B. Approximately 1.1 miles (ten spurs) of **temporary road construction** (roads built, used and decommissioned the same season) would occur on government and 0.1 miles of private land for a total of 1.2 miles). **Road renovation** (restoring the road back to its original design) or **improvement** (improving the road beyond its original design) would take place on approximately 5.1 miles of government and private road. This would consist of installing or maintaining drainage structures (culverts and ditches), reshaping the road surface and surfacing with crushed rock. **Road decommissioning** - "roads determined through an interdisciplinary process to have no future need . . ." (TMO, pg. 15) would take place on approximately 0.57 miles of Government road (see pg. 6 and 7).

Timber harvest would consist of regeneration harvest. **Regeneration harvest** is designed to open the forest canopy to allow the re-establishment of a new forest stand with early seral stage vegetation (even-aged). The technique of modified even aged management and reserve seed tree harvest (RMP, pg. 150) would be used. The traditional silvicultural seed tree system is modified to include biological legacies. This legacy consists of retaining a remnant of older aged, large (>20" diameter) green trees and snags (reserve trees), and coarse woody debris (CWD). CWD consists of trees, or portions of trees, that have fallen or have been cut and left in the unit for present and future wildlife habitat components (RMP, pg. 146) and to maintain site productivity.

The proposed action would require a mix of skyline cable logging (approximately 128 acres or 60%), helicopter logging (approximately 87 acres or 40%). Ground based (tractor) logging within the rights of way for new road construction would occur within the cable yarding areas (approximately 5 acres). Unit 7B would have the option of cable or helicopter yarding (see Appendix C). Helicopter landing locations are expected to be a minimum of one-half acre in size and no larger than one acre. Trees that are determined to be a hazard to flight operations could be cut under approval of the Authorized Officer. **Firewood cutting and salvaging** of logging debris (slash) could occur in landing cull decks. The firewood permit would address specific stipulations.

Prescribed burning of slash (burning under the direction of a written site specific prescription or "Burn Plan") would occur in the proposed regeneration harvest areas to prepare the site for tree planting by providing plantable spots for seedlings (i.e. clearing away the slash), removing or temporarily retarding competing vegetation as well as reducing the fuel loading hazard. Approximately 210 acres would be burned. Burning would be by a combination of broadcast burning (56 ac.) and machine and/or hand pile and burn (154 ac.). Broadcast burning would take place in units 19CE (15 acres), 19D (16 acres.) and 21A (26 acres, regeneration harvest portion). Units 19CE, 19D, and 21A would be considered for machine piling following harvesting operations (see Appendix C). No burning would take place in any of the partial cut areas. **Fire trails** would be constructed by hand around the perimeters of the units to be broadcast burned and along the east boundary of unit 7A prior to ignition. Hardwoods in units 1AB and 13B, not reserved for retention trees, would be yarded to help improve the plantability of the site following harvesting.

D. Project Design Features as part of the Proposed Action

This section describes the project design features (PDF's) which would be incorporated in the implementation of the action alternatives. PDF's are site specific measures, restrictions, requirements or structures included in the design of a project to reduce adverse environmental impacts. These are listed in the RMP (Appendix D, pg. 129) as "Best Management Practices" (BMP's) and in the ROD as "Standards and Guidelines" (S&G's). BMP's are measures designed to protect water quality and soil productivity. S&G's are "... the rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained." (S&G, pg. A-6). The proposed action includes the following PDF's :

1. **To meet the components of the "Aquatic Conservation Strategy (ACS)" (S&G's, pg. B-12):**

   a. **Riparian Reserves (Component #1)** would be established. Riparian Reserves consist of the lands incorporating permanently flowing (perennial) and seasonally flowing (intermittent) streams, the extent of unstable and potentially unstable areas, and wetlands. The ROD (C-30) and RMP (pg. 24) specify Riparian Reserve widths equal to the height of two site potential trees on each side of fishbearing streams and one site potential tree on each side of perennial or intermittent non-fishbearing streams. Data has been analyzed from District inventory plots and the height of a site potential tree for the Elk Creek watershed has been determined to be the equivalent of 200 ft. slope distance. Therefore, Riparian Reserve boundaries would be approximately 200 ft. slope distance from the edge of nonfish bearing streams and 400 ft. from fish bearing streams in the project area (East Elk WA, pg. 1-4). There were no Riparian Reserves adjacent to harvest units 19A and 19D where they overlap into the Calapooya and Upper Umpqua fifth field watersheds. Two fish-bearing streams in the project area occur near harvest units. South Fork Billy Creek is adjacent to harvest unit 13B and Huntington Creek is adjacent to units 19CE and 21A. Units 13B, 19CE, and 21A would receive a 400 foot slope distance no harvest buffer along the fish bearing streams.

   1) Streambank stability and water temperature would be protected by maintaining the NFP prescribed Riparian Reserve along all streams.

   2) Riparian habitat would be protected from logging damage by directionally felling trees that are within 100' of the Riparian Reserve away from the Riparian Reserve and yarding logs away from or parallel to the streams (i.e. logs would not be yarded across streams). No regeneration harvest would take place within the Riparian Reserves. Approximately 245 ft. of road building would occur within the Riparian Reserve (extension of road number 23-6-24.1). This road is located approximately 163 feet above a stream inception point at a ridgetop location. There would be no disruption or diversion of overland flow due to construction of this road. Sidecasting of soil from road construction would be restricted to prevent the introduction of sediment to streams. No channels would be crossed with any new construction. There would be no landing areas constructed in the Riparian Reserves. Areas that could potentially impact the meeting of ACS objectives were dropped from the project (easterly half of unit 7B, see Appendix D).

   3) The riparian vegetation of wetlands less than one acre would be protected by not permitting logging through the wetland. No wetlands occur within any harvest unit. No roads would be constructed through any wetland.

b. **Key (Tier 1) Watershed (ACS Component #2)** were established "as refugia . . . for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species [RMP, pg. 20: S&G's, pg. B-18]." This project is not in a Key Watershed.

c. **Watershed Analysis** (ACS Component #3) has been completed for Elk Creek and the Upper Umpqua watersheds (see pg. 2). The Watershed Analysis for Calapooya Creek is expected to be completed in the Summer or Fall of 1999.

d. **Watershed Restoration** (ACS Component #4) in this watershed would be accomplished primarily through timber sale related projects. This would include road decommissioning and road improvement. Approximately 0.57 miles of existing roads would be decommissioned. This particular project includes the full decommissioning of roads number 23-6-13.0 (0.14 mi.), 23-6-14.0 (0.16 mi.), and a portion of 23-5-17.0 (0.23 mi.) as recommended in watershed analysis (B-H-Y WA, page 71). Road 23-6-12.2 would be decommissioned for 0.04 miles where it enters BLM in section 13 permanently blocking vehicular traffic. Road decommissioning would consist of "closing and stabilizing ... to eliminate potential storm damage and the need for maintenance" (ROD, pg. B-31).

2. **To minimize the loss of soil productivity (i.e. limiting erosion, reducing soil compaction, protecting slope stability and protecting the duff layer):**
a. **Measures to limit erosion and sedimentation from roads** would consist of: (1) Maintaining or improving existing roads (Roads No. 23-5-17.0, 23-5-19.0 (B-H-Y WA page 72),, 23-5-19.1, 23-5-19.2, 23-5-29.0, and 23-6-12.2) to fix drainage and erosion problems. This would consist of maintaining existing culverts, installing additional culverts, and surfacing the road with crushed rock. (2) Building, using and decommissioning temporary roads in the same operating season (i.e. no over-wintering of bare erodible subgrade). When logging is completed, the roadbed would be subsoiled, water barred, blocked and seeded with native species or a sterile hybrid mix depending on availability. (3) Restricting road renovation and log hauling on unsurfaced roads to the dry season (normally May 15 to Oct. 15), however, operations would be suspended during periods of heavy precipitation. This seasonal restriction could be adjusted if conditions are such that no environmental damage would occur (ex. the dry season extending beyond Oct. 15). (4) Restricting in-stream work (i.e. culvert replacement and fill removal) during periods of low flow (between July 1 and September 15). These BMP's (RMP, pg. 136-7) are designed to minimize sedimentation and protect water quality.

b. **Measures to limit soil erosion and sedimentation from logging** would consist of: (1) requiring skyline yarding where cable logging is specified. This method limits ground disturbance by requiring partial suspension during yarding (i.e., the use of a logging system that "suspends" the front end of the log during in-haul to the landing, thereby lessening the

"plowing" action that disturbs the soil). In some limited, isolated areas partial suspension may not be physically possible due to terrain or lateral yarding. Excessive soil furrowing would be hand waterbarred. Dry season logging would be required in or on portions of unit 1AB, unit 13C, unit 19A, unit 19B, unit 19CE and unit 19D. If unit 7B is cable yarded, harvest would also be limited to the dry season. (2) Helicopter logging (Units 7A, 7B, 21A, and portions of unit 19A, and unit 19B) where partial suspension would not be possible. Logs would be lifted vertically off the ground and flown to landing areas on existing roads. (3) Ground based logging would be limited to the dry season as described above.

c. **Measures to limit soil compaction** (RMP, pg. 37) would consist of: (1) limiting ground based logging, including road right-of-way clearing (Units 1AB, 7B, 13B, 13C, 19A, 19B, 19CE, and 19D rights-of-way) to the dry season (May 15 to Oct. 15), however, operations would be suspended during periods of heavy precipitation if resource damage would occur. This season could be adjusted if conditions are such that no resource damage would occur (i.e., the dry season extending beyond Oct. 15). (2) Confining ground based activities to designated skid trails as identified in an approved logging plan. (3) Subsoiling of decommissioned roads (except 23-5-17.0), temporary spur roads and skidtrails with a winged subsoiler (or equivalent) to mitigate compaction damage. Subsoiling is a practice that ameliorates soil compaction and improves water infiltration by pulling a device known as a "winged subsoiler" with a crawler tractor. The Authorized Officer (Contract Administrator) may decide that additional isolated minor ground based logging would be necessary. Such proposals may be subject to interdisciplinary review. (4) Machine piling would limited to the use of low pressure tracked type excavators and would be limited to slopes less than 35 percent under dry soil conditions, using existing trails as much as possible. Where possible equipment would be limited to a single pass over any area. Travel over slash would further prevent soil compaction.

d. **Measures to protect the duff and surface soil layer** (RMP, pg. 37) would consist of burning of slash during the late fall through the spring season when the soil and duff layer (soil surface layer of fine organic material) moisture levels are high and the large CWD has not dried. This practice would protect the soil duff layer and the CWD from being totally consumed by fire and the surface layer from being negatively altered. The CWD reserved according to ROD guidelines would also be a source of organic material that can become incorporated into the soil structure (See para. 3b, below).

e. **Measures to protect slope stability**. Harvests would be restricted to the dry season where cable yarding would occur from temporary spurs (units 1AB, 13C, 19A, 19B, 19CE, and 19D). If unit 7B is cable yarded, harvest would also be limited to the dry season. Timber falling would be limited to the dry season in unit 19B. Timber falling on the very steep scarp in Unit 7A would be restricted to when soil is not at the point of saturation.

Seasonal harvest and falling restrictions would lessen the risks of landslides being initiated during felling and yarding on steep slopes. Helicopter yarding in Units 7A and part of Units 19A and 19B and cable yarding with at least one-end suspension would also help. Other PDF's would consist of: (1) grouping retention trees in areas identified (see soils report, Appendix F) in Units 1AB, 7A, 13B, and 13C; (2) Hand water-bar cable corridors in the event that grooves in soil result from yarding; (3) Broadcast burning would be limited on steep slopes, i.e. hand pile and burn. (4) New roads would be located in the most stable locations and with proper drainage structures. NOTE: The PDF's listed in paragraph b above would also reduce the risk of slope failure as well as limiting erosion.

3. **To provide for wildlife:**

a. Future nesting and roosting habitat for cavity dwellers would be provided by reserving most existing hard or soft snags (at least 20" in diameter and 20 ft. in height) sufficient to meet the population needs of 40% of potential population (RMP pg. 64). This has been determined to be 1.2 snags per acre. Where this quantity is lacking, additional green trees would be reserved for future snag recruitment. Note: Any snag deemed as hazardous to worker safety could be felled at the discretion of the operator and the sales administrator. Such trees would be reserved and left in place as CWD.

b. Wildlife habitat values would be maintained through the retention of six to eight large (greater than 20") green conifer trees per acre in the GMFA units and twelve to eighteen trees per acre in the Connectivity/Diversity Block (Units 19A, 19B, 19CE and 19D) and occasional hardwoods as a biological legacy (RMP Appendix E, pg. 150). At least 120 linear feet of CWD per acre (at least 16" in diameter and 16 ft. in length) would be preserved for the habitat of organisms that require this ecological niche (S&G, C-40, para. B). Where CWD is lacking in the above quantities, extra green trees would be reserved for future CWD recruitment (RMP pg. 65).

4. **To protect air quality:**

All slash burning would have an approved "Burn Plan" and be conducted under the requirements of the Oregon Smoke Management Plan in a manner consistent with the requirements of the Federal Clean Air Act. The Federal Clean Air Act is designed to reduce air pollution, protect human health and preserve the Nation's air resources. The Oregon Department of Environmental Quality is responsible for implementing the Federal Clean Air Act. The Oregon Smoke Management Plan requires the Oregon State Department of Forestry to manage the amount of smoke released into the airshed as the result of slash and field burning.

5. **To protect and enhance stand diversity:**

a. All tree species currently represented in the stand would continue to be represented in the stand after the harvest. Large "wolf" trees (large, full crowned, limby trees) would be retained for non-vascular plant legacy attributes. Retention trees would be retained in a scattered arrangement of individual trees as well as occasional clumps of two or more trees (RMP, pg. 64).

b. Snags and CWD would be reserved as described in paragraph three above.

6. **To prevent and report accidental spills of petroleum products or other hazardous materials:**

Hazardous materials (particularly petroleum products) would be stored in durable containers and located so that any accidental spill could be contained and not drain into riparian areas. All landing trash and logging materials would be removed. Accidental spills or discovery of the dumping of any hazardous materials would be reported to the Sale Administrator and the procedures outlined in the "Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan" would be implemented.

7. **To prevent the spread of noxious weeds:**

Equipment would be inspected for noxious weeds prior to entry on BLM lands. Equipment would be required to be cleaned prior to move-in. *(BLM Manual 9015 - Integrated Weed Management*).

8. **To protect Special Status and SEIS Special Attention Plants and Animals:**

a. *Sarcosoma mexicana* was found in unit 13C. No regeneration harvesting would occur within 200 ft. from the site.

b. Survey and Manage (S&M) mollusk species found in and near the harvest units would be protected with a mix of no harvest buffers (unit 1AB, unit 7B, unit 13C, unit 19A, unit 19B, clumping of retention trees (unit 7A), and maintaining a minimum of 60% overstory canopy closure (units 7A, 19CE, and 21A) for known sites. (See Appendix F, Wildlife report and Addendum to Wildlife report).

c. If, during subsequent surveys or implementation of the proposed action, any Special Status (threatened or endangered, proposed threatened or endangered, candidate, State listed, Bureau sensitive and Bureau assessment) species or SEIS Special Attention (survey and manage or protection buffer) species are found, evaluation for the appropriate type of mitigation needed for each species would be done. Stipulations would be placed in the contract to halt operations if any of these Special Status or SEIS Special Attention plants or animals are found to allow time to determine adequate protective measures before operations could resume.

d. Seasonal restrictions to prohibit logging during the nesting season (March 1 to September 30) would be applied to Units 13B and 13C if surveys indicate that a northern spotted owl (NSO) is nesting or fledgling NSO are found within 0.25 miles of units 13B and 13C.

9. **To protect cultural resources:**
Stipulations would be placed in the contract to halt operations and evaluate the appropriate type of mitigation needed to provide adequate protection; if any objects of cultural value (e.g. historical or prehistorical ruins, graves, fossils or artifacts) are found during the implementation of the proposed action.

E. Project Design Features as part of Alternative B. (Temporary ridge road in Section 13 and cable log Unit 13B.)
All project design features would be the same as those in the proposed action alternative (Alternative A) except that the road built to access unit 13B would be temporary and not permanent. Under this alternative, this road would be constructed and used during the dry season (typically May 15 to October 15) of the same year. All other project design features, as they pertain to temporary roads as described in the proposed action alternative, would be implemented.

F. Project Design Features as part of Alternative C. (No ridge road in Section 13 for access to unit 13B, and helicopter log Unit 13.)
All project design features would be the same as those in the proposed action alternative (Alternative A) except that no road built to access unit 13B and unit 13B would be helicopter yarded.

G. Alternatives Considered but not proposed for implementation
A temporary spur road was proposed for construction to access unit 21A. The beginning of this spur would have been constructed in the Riparian Reserve of Huntington Creek, a fish bearing stream. Due to the close proximity of the new road construction to Huntington Creek and possible sedimentation, this construction was dropped in favor of helicopter yarding unit 21A. Approximately 10 acres was dropped from the easterly portion of unit 7B because of concerns with slope stability.

III. AFFECTED ENVIRONMENT

This section describes the existing environment and forms a baseline for comparison of the effects created by the alternatives under consideration. Appendix F (Analysis File) contains Specialist's Reports with supporting information for this analysis.

This project lies within the Oregon Coast Range Physiographic Province. The FSEIS describes the affected environment for this province on page 3&4-21.

A. Stand Description

Current landscape patterns include natural stands that are the result of fire, managed stands established following timber harvest, and non-forested agricultural and pasture lands. The watershed analyses contains maps showing land ownership patterns, roads and streams, towns, and the spatial arrangement of stands by age and seral condition. In the past, fire was the primary factor in shaping this landscape. Recently, timber harvest, road building, agriculture, and the suppression of fire has had a major effect.

Three vegetation zones are present within the project area; western hemlock, grand fir, and interior valley (Hackman 1994). Vegetation zones are used to describe such things as potential production capabilities, expected vegetative response following disturbance, and plant communities. The area where the project is proposed is a transition between the interior valley and the grand fir zone.

Douglas-fir is the predominant species within the analysis area because of fire. Competing vegetation including hardwoods, shrubs and grass can negatively affect the establishment and growth of conifers. A more detailed description can be found in the Silviculturist report in the Appendix F.

B. General Site Description

The proposed sale area is in the Coast Range Province. The geology is the Siuslaw member of the Flournoy formation: Thick-bedded, massive to fine-grained micaceous amalgamated lithic-feldsparthic sandstone with minor sequence of thin-bedded siltstone and fine to very fine-grained sandstone beds and some very thick-bedded channelized sandstone. (Soil's Report, Appendix F)

Topographic features include broad ridgetops and benches with gentle to moderate slopes, very steep mountain slopes and extremely steep scarps overlooking gentle terrain. Elevations range from 600 to 1900 feet. Unit 19D and portions of units 19A, 19B, and 19CE are located in the Transient Snow Zone (>1500 feet elevation). The mean annual precipitation is about 45 inches. (Soil's Report, Appendix F)

The soils vary from very shallow and loamy on the steepest slopes to very deep and clayey on the more gentle slopes. Many soils on the shallow end are very gravelly (19B). The soils are typically well drained. The soil textures are generally moderately erodible under bare soil conditions (Soil's Report, Appendix F).

C. Affected Resources

Botanical - Botanical surveys for special status species were conducted. The fungi *Hydnum repandum, Sarcosoma mexicana, Sarcospheara eximia, Gyromitra esculenta,* and *Plectania melastoma* (S&M) and vascular plant, *Dichelostemma ida-maia* (tracking species) were found to occur in the project area. There are some localized infestations of scotch broom, a noxious weed, in the project area. No threatened or endangered (T&E) plant species have been found in the project area. (Botany Review, Appendix F).

Cultural Resources - No cultural resources were found in the project area.

Fisheries - There are four fish-bearing streams in the proposed project area: Huntington, Flagler, South Fork Billy, and East Fork Billy Creeks. Umpqua cutthroat trout, an endangered species, coho salmon a threaten species, and steelhead trout, a candidate threatened species, inhabit and utilize all, or portions of, these streams. Umpqua cutthroat trout is currently proposed for removal from the endangered species list. An existing culvert on road number 23-6-12.1 blocks fish passage on the South Fork of Billy Creek.

Hydrology - Beneficial uses of water derived from streams adjacent to or downstream of proposed units are resident and anadromous fish and aquatic life, irrigation, livestock watering, and private domestic water supply.

Wildlife - T&E species - There are four spotted owl sites within 1.5 miles of the sale area, one owl site is within 0.25 miles of proposed units (13B&C). This sale contains 193 acres that is considered suitable spotted owl habitat (112 acres is in critical habitat (CHU OR-57)). There are no known, occupied, marbled murrelet sites within 0.25 miles of the proposed units. Within the proposed harvest units, 163 acres is considered to be suitable murrelet habitat. There are no known bald eagle nests or winter roosting areas within 0.25 miles of the sale area. The project area is outside of the known range of the Douglas County population of Columbia white-tailed deer.

S&M Species - Approximately 225 acres of suitable red tree vole habitat are contained within the sale units. Three possible red tree vole nests have been reported in or near unit 7B. Surveys for S&M mollusk species have been completed. The mollusk species Oregon megomphix, blue-grey tail-dropper, and papillose tail-dropper have been found to occur in an near the proposed harvest units. (Wildlife Report and Addendum to Wildlife Report, Appendix F).

IV. ENVIRONMENTAL CONSEQUENCES

This section forms the scientific and analytical basis for the comparisons of the alternatives. The probable consequences (impacts, effects) each alternative would have on selected resources are described. This section is organized by the alternatives and the effects on the key issue(s) identified in section I paragraph G, as well as the selected resources. Analysis considers the direct effects (effects caused by the action and occur at the same place and time), indirect effects (effects caused by the action and occur later in time or farther removed in distance) and cumulative effects (impacts of the action when added to other past, present and reasonably foreseeable future actions) on the resource values. The environmental consequences for the various resources are more fully analyzed in Appendix F (Analysis File). This Appendix contains Specialist's Reports and the supporting information for this analysis. The EIS and FSEIS analyzes the environmental consequences in a broader and more detailed context. This EA does not attempt to reanalyze all possible impacts that have already been analyzed in these umbrella documents but rather to identify the particular site specific impacts that could reasonably occur.

Some irreversible and irretrievable commitment of resources would result from the implementation of this project. An irreversible commitment is a commitment that cannot be reversed whereas an irretrievable commitment is a commitment that is lost for a period of time. An irreversible commitment of petroleum fuels for logging and timber hauling as well as the loss of rock from quarries for crushed rock used in the reconstruction of the road system would result from the proposed action. The irretrievable loss of the ecological and human values associated with old-growth forest would result, if this area is managed on an 80 to 150 year rotation.

A. No Action Alternative:

This alternative would not meet the RMP (pg. 15) objective of producing forest commodities that would contribute to the local economy for this particular project. It would not realize opportunities for restoration of past disturbance. Road densities and conditions would remain unchanged. Changes in stand structure and species composition would result from natural processes including growth and competition for growing space, fire, disease, and insects. The project area would naturally regenerate following disturbance events. The potential production of wood volume and increased wood quality is reduced. The timber resource objectives for Matrix lands are not met under this option.

KEY ISSUE: Fisheries and Water Quality

The existing roads would not be improved, and sediment delivery to streams would continue due to road related slides and insufficient drainage features. Road decommissioning would not occur that otherwise would have a positive benefit to the aquatic environment. The road related drainage and sediment problems from the existing road system would continue to impact to fish populations and keep the spawning and rearing habitats in a suppressed state. Surface water would continue to be intercepted in places, creating surface flow that would route water to the stream channel more quickly, reducing the quality of summer and winter rearing habitat by increasing winter flows and decreasing summer flows.

Botanical - The forest stands proposed for harvest would continue to support a relatively high diversity of vascular and non-vascular plant species. Refugia for plant species associated with late successional forests would also be maintained within the harvest units. (Botany Review, Appendix F).

Fisheries - The no action alternative would result in no new direct impacts to fish. No road construction or timber harvest would occur, thus no new impacts could occur. There would continue to be indirect impacts to fish from the existing road system. The no action alternative would not repair road related drainage and sediment problems which currently maintain the spawning and rearing habitat in a suppressed state. Fish passage at road crossings on South Fork of Billy Creek Five Point Canyon Creek would not be improved. The existing road system may deteriorate further in the future.

Hydrology - The hydrology of streams in the project area would not be affected due to vegetation removal. The existing roads would not be improved, and sediment delivery to streams would continue due to road related slides and insufficient drainage features.

Soils - Decommissioning of the existing unsurfaced roads and the installation of the fish passage culvert on the South Fork of Billy Creek would not occur at this time unless alternate funding is secured. Road 23-6-13.0 would continue to experience erosion problems. Soil productivity would not be improved on roads 23-6-13.0 or 23-6-14.0. The absence of decommissioning would not change any the sediment levels presently entering into streams.

Wildlife - There would be no loss of suitable habitat for the NSO or marble murrelet. In time, currently non-suitable habitat adjacent to the sale area would increase in quality and the long term stability of the impacted owl sites would improve. There would be no loss of spotted owl dispersal habitat in this alternative. NSO critical habitat would not be lost and the ability of CHU OR-57 to maintain existing sites and to provide for the dispersal and movement between the Coast Range and the Cascades would only improve with time. Roosting habitat for American bald eagle or other raptors would not be lost. There would be no effect on S&M species.

B. Proposed Action Alternative:

The following paragraph discusses the direct impacts (i.e. impacts caused by the action at the same time and place) and indirect impacts (i.e. impacts caused by the action but occur later in time and farther removed in distance) of the Proposed Action (Alternative A).

Botanical - Harvesting would convert the units to an early seral stage that would result in an increase in vascular plant biomass and could increase the potential for noxious weeds. There would likely be a reduction in the amount of non-vascular plant diversity. Large diameter retention trees would likely guarantee that some non-vascular plant legacy would be retained after harvesting. Road construction would have a negative impact on fungi in the right of way area. Effects from proposed site preparation are unknown.

KEY ISSUE: Fisheries and Water Quality

Fisheries - No new road construction or timber harvest would occur near fish bearing streams. The only action that would occur on fishbearing streams would be the culvert replacement for fish passage. Culvert replacement could result in direct injury or mortality of juvenile fish. This could occur from heavy equipment operating in the stream channel or fill material being placed in the channel. The direct effects are expected to be confined to the areas where the culverts are being replaced. The long-term benefit of restoring fish access to South Fork Billy Creek and Five Point Canyon Creek would be fish production from areas upstream from the culverts.

All of the action alternatives may cause indirect impacts to the fisheries resource. The major potential impacts to fish habitat are the alteration of flow regime and the increase in slope stability concerns. "Relationships between long-term trends in aquatic system degradation and the effects of forest management practices are well known, but quantitative relationships have been difficult to

establish. Due to the inherent differences in stream size, storm magnitude and geology, similar management practices may result in a different response" (page V-31, FEMAT). It would be difficult to quantify direct linkages among processes and functions outside the stream channel to in-channel conditions and biological factors. Concerns with the alteration of the flow regime and slope stability are further addressed in the soils and hydrology reports. In addition, positive effects would occur with this proposal. The portion of road 23-6-12.2 in Section 13 would be blocked from vehicles. This portion is in disrepair, but is currently re-vegetating and recovering. Vehicular travel may cause damage to the recovering groundwater movement and sediment supplying mechanisms. Two culverts would be replaced in Section 12 that would restore fish passage to at least 3/4 mile of stream. These culverts are rusting through and could fail. In the event of failure the damage from the washed out fill would be detrimental to the fisheries habitat below the culverts. Bringing the crossings up to RMP standards would limit the risk of failure. The culvert replacements would cause a short term increase in turbidity which may effect fish by compromising their ability of fish to feed. The long term benefit would be fish production from the areas upstream of the culverts. The probability of impacting fish is higher when actions occur within the Riparian Reserve. Road construction to access unit 13B would be mostly on a stable ridgetop while in the Riparian Reserve and would not cross any stream. Cutbanks would be shallow and surface runoff would be routed away from streams onto the forest floor. No vegetation would be removed near the stream so the stream would remain shaded. Conifers are sparse were the road would be placed, only a debris flow could deliver them to a fish bearing stream. The probability of any impact being realized would be negligible barring an extreme event.

Hydrology - No direct impacts to hydrology associated with the harvest of any of the proposed units is expected. The project design features and best management practices (BMP's) described in the EA should protect the hydrologic function and water quality of riparian areas under all alternatives. Seasonal restrictions on logging, no yarding through Riparian Reserves, and adherence to the RMP guidelines for road design and location are examples of BMP's that should minimize impacts to water quality. One culvert and an old bridge are proposed to be replaced in the project area, which would increase the suspended sediment and turbidity (above baseline conditions) downstream for a short time period. Seasonal restrictions and the application of BMP's should minimize direct impacts to water quality and produce long term aquatic benefits by providing fish passage. Direct impacts to downstream beneficial uses of water due to culvert replacements is not expected to be significant due to the factors listed above.

The indirect effects from the proposed would be potential for changes to riparian microclimate associated with the stream south of unit 13B due to road construction and sediment delivery to streams from road improvements and use in the project area. The potential impacts to riparian microclimate are expected to be minimal or immeasurable because only a few trees along the ridge and within the Riparian Reserve would be removed. Indirect impacts associated with road improvements, decommissioning, temporary road construction should be minimized by the seasonal restrictions and adherence to BMP's regarding road construction and use. Sedimentation would more likely occur from winter hauling of timber, road renovation, road improvements, and culvert replacements, but is expected to be short duration pulses of sediment. The short duration pulses of

sediment are likely to increase suspended sediment and turbidity above baseline conditions in the short term (1-3 years). The addition of culverts and other drainage features are expected to positively affect the existing routing of water and sediment by decreasing the amount of runoff directly entering into stream crossings. The proposed temporary roads would not cross any streams. The quantity of sediment routed to streams from road activities is small compared to a debris torrent or landslide, which is the most likely mechanism for delivering large amounts of sediment and coarse wood to streams.

The proposed action could affect the hydrology of tributaries within the project area because of potential increases in water available for runoff due to vegetation removal in the transient snow zone (TSZ). However, the risk of increasing the magnitude of rain-on-snow events (from harvesting in the TSZ) or significantly increasing the magnitude and frequency of peak, low, and base flows is expected to be low. Early fall and spring rain storms are generally small, so large relative flow increases are limited to the smaller flow events. Later in the fall and winter months as soil moisture differences become less important, the magnitude of peak flow differences become small to nonexistent. Most of the proposed harvest units are located below the TSZ (400m-1200m), except for units in section 19, which range in elevation from 400 - 550 meters. Snow occurring within openings created in Units 19A, 19B, 19CE, and 19D would probably last only 1-3 days before melting. Most of the sixth- and fifth-field watersheds are below the TSZ, and rain-on-snow flood events are probably rare. The establishment of Riparian Reserves is expected to moderate negligible to small increases in peak, low, and base flows as well as protecting channel morphology.

Soils - There would be some level of sediment reaching streams due to the first season flush following construction disturbances and hauling. The level of sedimentation into streams would be small on a per mile basis. Ditch relief culverts would direct most of it onto forest floors. Cross drainage and landing drainage would eliminate roads as a factor for downslope landslides in Units 1AB, 13B, 13C, 19A and 19B. Wet weather during the dry season operations could cause temporary rutting and erosion of the spurs. Because of their high ridgetop positions and drainage features sediment would not escape the sites. Seasonal restrictions for yarding and falling would lessen the risks of landslides being initiated. Productivity loss for the entire sale area due to new road and helicopter pad construction is estimated to be about 1.5 percent. Subsoiling temporary spurs would reduce it to about 1.0 percent. Erosion and sedimentation would not be a problem on decommissioned spurs with effective waterbarring and blocking to traffic. A tighter culvert spacing than normal for the sidelope portion of the 23-6-24.1 extension would reduce the risk of extra drainage reaching the headwall of concern in the event of a culvert blockage. The chance of any potential landslide reaching a perennial or intermittent stream or a torrent initiating would be low to none, depending on location. Harvesting these areas using BMP's would therefore be in compliance with the ROD.

Wildlife - This sale would remove approximately 193 acres of suitable spotted owl habitat from within the provincial radius (1.5 miles) of four owl sites and 11 acres of habitat from within 0.25 miles of one spotted owl site. Two hundred and twenty-five (225) acres of spotted owl dispersal habitat would be removed and approximately 112 acres of spotted owl critical habitat (CHU OR-

57). There are no known murrelet sites within 0.25 miles of the proposed sale units. There would be the loss of approximately 163 acres of suitable murrelet habitat but no impacts to marbled murrelet critical habitat. There would be no effect to known bald eagle nests or known winter roosting areas. There would be the loss of about 75 acres of valley margin habitat, important to a variety of raptors. There would be a loss of approximately 225 acres of potential red tree vole habitat. It is likely that red tree voles inhabit most of the sale units and surrounding area. There would be no impacts to any known maternity, wintering, or communal bat roosts. There is the possibility that the roost sites of individual bats would be affected.

There should be no indirect impacts due to disturbance to the northern spotted owl. There is the potential for a dispersing owl to move through the area and not be identified. This area would be surveyed every year and a seasonal restriction would be placed on any unit within 0.25 miles of a nest site in order to minimize the impacts of disturbance. Should surveys identify any murrelet sites, mitigation consistent with the RMP (including season and daily operational restrictions) would be implemented to reduce the impacts of disturbance habitat loss on those sites.

C. Alternative B: Temporary ridge road in Section 13 and cable log Unit 13B.
Impacts would not differ from those described under Alternative A for botany, fisheries, hydrology, and wildlife resources.

Soil - Impacts would nearly the same as Alternative A. There could be a higher level of erosion on the 23-6-24.1 extension to Unit 13B under this alternative if unseasonably wet weather occurs during the dry-season operations. None of the additional increment of sediment would reach a stream. There would be a slightly lower risk than Alternative A of landslides being initiated by cable yarding due to dry season restrictions in Unit 13B. Decommissioning the 24.1 extension would be by a combination of subsoiling and trench waterbarring. Approximately 1.1 acre of extension roadbed would be returned to a more productive state (fill portions on sideslopes and some ridgetop positions) and other parts would begin the very long soil building process (cut portions and ridgetop positions where little or no soil remains). Productivity loss for the entire sale area due to new road and helicopter pad construction is estimated to be 1.25 percent. Subsoiling temporary spurs, the 23-6-24.1 extension and one helicopter pad would reduce it to about 0.65 percent.

D. Alternative C: No ridge road to access unit 13B, and helicopter log Unit 13B.
Impacts would not differ from those described under Alternative A for botany, fisheries, hydrology, and wildlife resources.

Soil - The road-related soil productivity impacts and the low potential of headwall landslides that could be initiated by the 23-6-24.1 road would be avoided. Productivity loss for the entire sale area due to new road construction and helicopter pad construction is estimated to be 1.5 percent. Subsoiling temporary spurs and one helicopter landing would reduce it to about 0.4 percent. There would be not be any cable yarding trails and associated impacts in Unit 13B. There would be a slightly lower risk than Alternative B of landslides being initiated in Unit 13B. The graph in the soils

report compares the differences of the alternatives in new construction disturbances and associated productivity losses. Impacts to soil productivity and the risks to water quality and stream structure due to sedimentation would be at levels deemed acceptable by the analysis of the SEIS.

E. Cumulative Impacts Analysis (Alt. A)

The following paragraphs discuss the cumulative impacts (i.e. the incremental impacts of the action when added to other past, present and foreseeable future actions). Cumulative impacts will discussed for each action alternative. These impacts are described for federal lands. There has been a continued conversion of late seral and old-growth habitat on private, industrial forest lands to early seral stages. Current management strategies on most of this private land would preclude the development of older seral conditions in the future.

Botanical - There would be a reduction in the amount of habitat for plants associated with late-successional forests.

Fisheries - Cumulative impacts to fisheries are measured as an increase in harvested acres and increased road miles within the watershed. This action would increase the amount of harvested acres, but would not increase the miles of permanent road.

Hydrology - Changes in vegetation and potential cumulative effects to water quality, hydrology, and channel condition are expected to be within the range of variability analyzed in the FSEIS. Although flow regimes in the past have been altered in these watersheds by roads, the proposed project would not significantly increase flows because decommissioning of existing unsurfaced roads, the length of newly constructed permanent road (road no. 24.1 extension) does not exceed the length of road that would be decommissioned, new construction is located on ridgetops and stable locations, drainage features are being added to existing roads, and other road improvements.

Soils - This action alternative with the incorporation of BMP's should have only minor contributions to the negative cumulative impacts to the soils resource. The general trend of soil productivity on BLM should be positive. The action alternative would give a minor short-term addition of erosion and sediment at sixth-field watershed scales. Because of the substantial improvements to the utilized haul roads, the action alternative would give long-term positive benefits in erosion and sediment reduction at sixth-field scales.

Wildlife - An additional 206 acres of late seral and old-growth habitat would be removed from the watershed and impact an additional four owls sites as well as murrelet and S&M and Protection Buffer Species habitat. Critical habitat for T&E species has not been previously impacted in the Elk Creek fifth-field watershed. Two hundred and six (206) acres of critical habitat would be removed. This sale would remove 225 acres of dispersal habitat. Within the seven sixth-field watersheds, dispersal habitat (NSO) would be reduced from 4343 acres (67%) of the federal forests to 4118 acres (64%).

F. Cumulative Impacts Analysis (Alt. B)
Impacts would not differ from those described under Alternative A for botany, fisheries, and wildlife resources.

Hydrology - The difference between the two alternatives is the longevity of changes to the area. The construction of a temporary road would disrupt the movement of water for a short period of time compared to a permanent road. Temporary roads would be subsoiled to restore infiltration capacity, site productivity, and ultimately allow vegetation to grow in the area.
Soil - When viewed at the sixth-field watershed level there would be minor differences in soil productivity between Alternatives A and B (higher in Alternative A). There would be a slightly lower risk of a low probability landslide caused by the 23-6-24.1 extension. Such a landslide would become a component of the cumulative impacts to water quality and stream structure.

G. Cumulative Impacts Analysis (Alt. C)
Impacts would not differ from those described under Alternative A for botany, fisheries, and wildlife resources and Alternative B for hydrology.

Soil - At the sixth field watershed level, cumulative impacts to soil productivity would be slightly lower than Alternative B. There would be a slightly lower risk to water quality and stream structure cumulative impacts.

V. CONTACTS, CONSULTATIONS, AND PREPARERS

A. Agencies, Organizations, and Persons Consulted
The Agency is required by law to consult with the following federal and state agencies (40 CFR 1502.25):

1. **Threatened and Endangered Species Section 7 Consultation** - The Endangered Species Act of 1973 (ESA) requires consultation to ensure that any action that an Agency authorizes, funds or carries out is not likely to jeopardize the existence of any listed species or destroy or adversely modify critical habitat. The required ESA consultation was accomplished with the **US Fish and Wildlife Service** (FWS) and the Biological Opinion (BO) was received on June 28, 1999 (Ref. no. 1-15-99-F-206). The BO concluded the proposed action is “not likely to jeopardize the continued existence of the spotted owl, murrelet, or bald eagle, and are not likely to adversely modify spotted owl or murrelet critical habitat” and an “Incidental Take Statement" was issued. Incidental Take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency. The FWS has stipulated terms and conditions for the Incidental Take having to do with seasonal restrictions for the northern spotted owl and the marbled murrelet. The Roseburg District's BA for Endangered Species consultation was submitted to the **National Marine Fisheries Service** (NMFS) on May 12, 1998. The Biological Assessment was a "may effect likely to adversely affect" for Umpqua River cutthroat trout and Oregon Coast coho salmon. A BO has not been received from the NMFS.

2. **Cultural Resources Section 106 Consultation -** Consultation as required under section 106 of the National Historic Preservation Act with the **State Historical Preservation Office** (SHPO) was completed on December 22, 1998 with a "No Effect" determination.

B. Public Notification

1. Notification was provided to affected **Tribal Governments** (Confederated Tribes of the Coos, Lower Umpqua and Siuslaw; Grande Ronde; Siletz; and the Cow Creek Band of Umpqua Indians). No comments were received.

2. A meeting was held with seven and letters sent to 20 **adjacent landowners**. Comments were received from five individuals or groups and are contained in Appendix G and concerns were addressed in Appendix D.

3. The **general public** was notified via the Roseburg District Planning Update (Spring 1998) going to approximately 150 addressees. These addressees consists of members of the public that have expressed an interest in Roseburg District BLM projects. Comments were received from Francis Eatherington representing Umpqua Watersheds, Inc. and the Oregon Natural Resources Council (see Appendix D - Issue Identification Summary).

4. Notification will also be provided to certain **State, County and local government** offices (see Appendix G - Public Contact).

5. A 30-day **public comment period** will be established for review of this EA. A Notice Of Availability will be published in the News Review. This EA and its associated documents will be sent to all parties who request them. If the decision is made to implement this project, a notice will be published in the News Review. If the decision is made to implement this project, a notice will be published in the News Review.

C. List of Preparers

Isaac Barner	Cultural Resources
Bruce Baumann	Layout Forester
Kevin Cleary	Fuels Management
Dan Couch	Watershed Analysis
Dan Cressy	Soils
Dave Erickson	Recreation / VRM
Chris Foster	Wildlife
Pete Howe	Engineering
Al James	Silviculture
Fred Larew	Lands
Jim Luse	EA Coordinator
Evan Olson	Botany
Ed Rumbold	Hydrology
Charlie Wheeler	Fisheries
Steve Weber	Presale Forester / EA Preparer

CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

The following elements of the human environment are subject to requirements specified in statute, regulation, or executive order. These resources or values are either not present or would not be affected by the proposed actions or alternatives, unless otherwise described in this EA. This negative declaration is documented below by individuals who assisted in the preparation of this analysis.

Element	Responsible Position	Initials	Date	Remarks
Air Quality	Fuels Management Specialist			
Areas of Critical Environmental Concern	Environmental Specialist			
Cultural Resources	Archeologist			
Environmental Justice	Environmental Specialist			
Farm Lands (prime or unique)	Soil Scientist			
Flood Plains	Hydrologist			
Native American Religious Concerns	Environmental Specialist			
Threatened or Endangered Species (wildlife)	Wildlife Biologist			
Threatened or Endangered Species (plants)	Botanist			
Threatened or Endangered Species (fish)	Fisheries Biologist			
Hazardous/Solid Wastes	District Hazardous Materials Coordinator			
Water Quality Drinking/Ground Water	Hydrologist			
Wetlands/Riparian Zones	Hydrologist			
Wild and Scenic Rivers	Recreation Planner			
Wilderness	Recreation Planner			

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East Elk Watershed Analysis, October 1996; Roseburg District, Bureau of Land Management, USDI.

Elkton-Umpqua Watershed Analysis, updated June 1998, Roseburg District, Bureau of Land Management, USDI.

Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl (FSEIS) (Feb. 1994)

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Integrated Weed Management, BLM Manual 9015 - Dec. 2, 1992

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National Environmental Policy Handbook (BLM Handbook H-1790-1)

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Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (ROD) and Standards and Guidelines for Management of Habitat for Late-Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl (S&G) (April 13, 1994)

Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan (FY 1998)

Roseburg District Record of Decision and Resources Management Plan (RMP) (June 2, 1995)

Upper Umpqua 5th Field Watershed, Second Iteration, August 1998.

Western Oregon Transportation Management Plan, June 1996; BLM - Oregon State Office, USDI